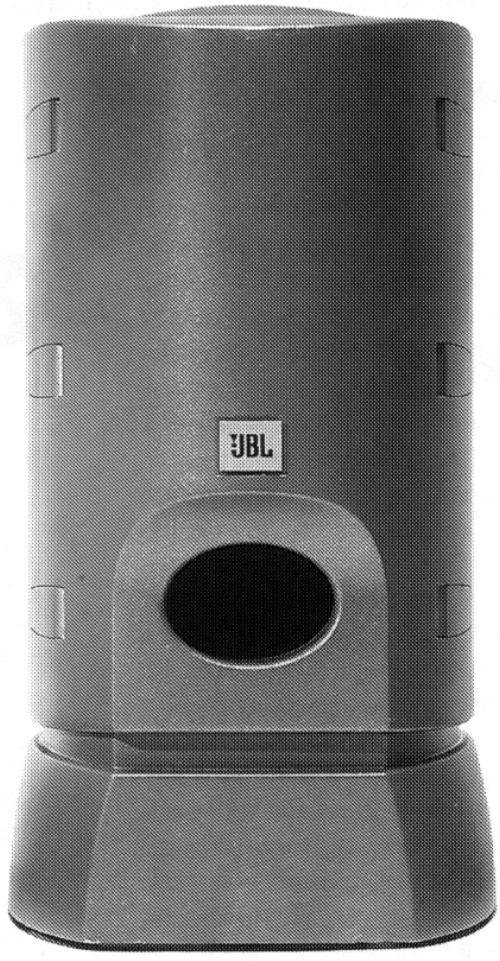
MultiMedia Series Loudspeakers

Media 2000

Service Manual



JBL Consumer Products
250 Crossways Park Dr.
Woodbury, New York 11797

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Media Sub2000 Specifications

Max Power Output	35 watts (@ 1% THD)
Frequency Response	50Hz – 120Hz
Input Sensitivity	3V Maximum
Input Impedance	10k ohms
Signal Input Jack	Stereo Mini-Connector (1/8”)
Signal Output Jack	Stereo Mini-Connector (1/8”)
Dimensions (H x W x D)	9 5/8 x 5 ¼ x 10 ¾”
	(244 x 133 x 273mm)
Weight	7.0 lbs. /3.2kg

TEST PROCEDURE

Media Sub2000

Frequency	20Hz – 600Hz
Input Voltage	0.175V
Volume	Maximum

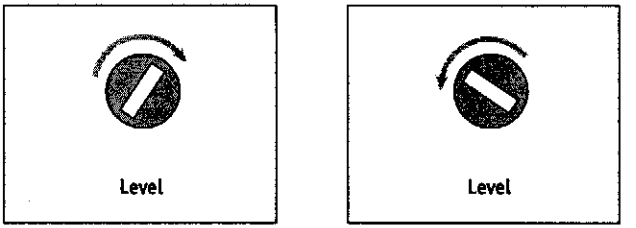
General Function

1. Assure Level control volume is Maximum (full CW)
2. Using sine wave generator sweep unit to range of above frequencies
3. Listen to driver and cabinet for rattles, clicks, buzzes, or other unusual noises

OPERATION

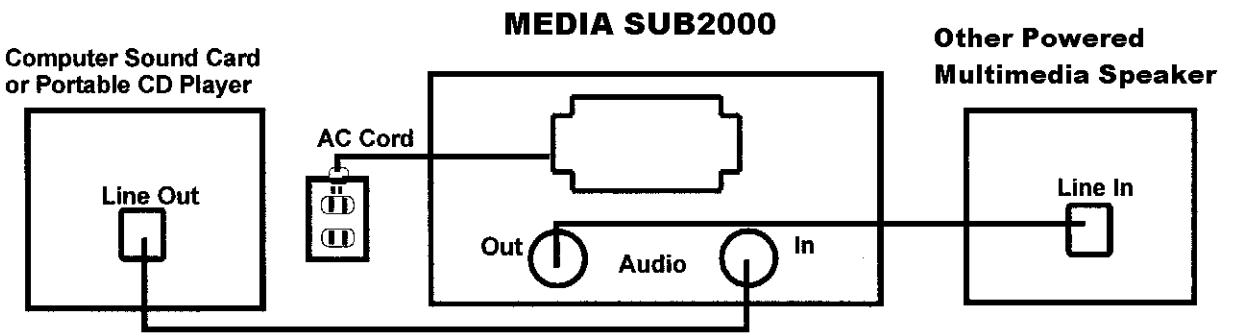
Media Sub2000

Level:
To raise the output level, rotate the *level* knob clockwise.
To lower the output level, rotate the *level* knob counterclockwise.



Auto turn-on/turn-off
The Media 2000 and Media Sub2000 feature an automatic turn-on/turn-off feature. They will turn off when the source equipment (computer or CD player) has no sound output for approximately fifteen minutes and immediately turn back on when a signal is present.

CONNECTIONS



Service Bulletin

Service Bulletin JBL9802 - May 1998

This is considered a Major repair

To: All JBL Service Centers

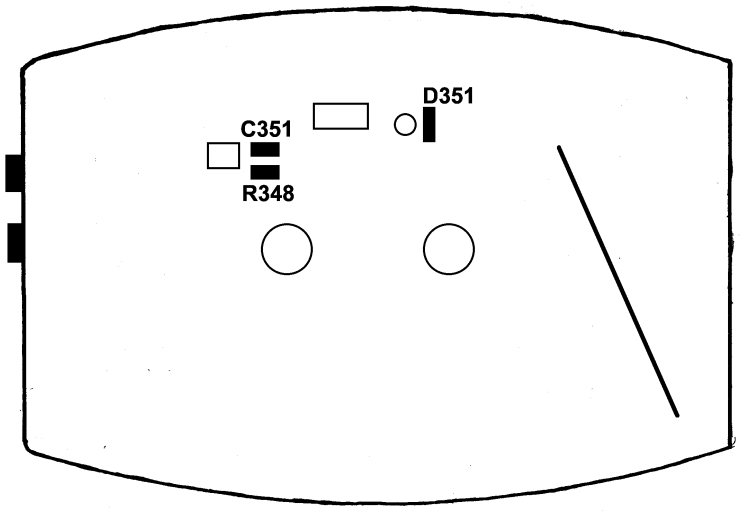
Model: Media Sub2000 Powered Subwoofer

Subject: False Triggering

In the event you receive a Media Sub2000 with the complaint: "the subwoofer never shuts off", or "the unit cycles on & off by itself with no input signal", perform the following modification to raise the input threshold of the subwoofer amplifier:

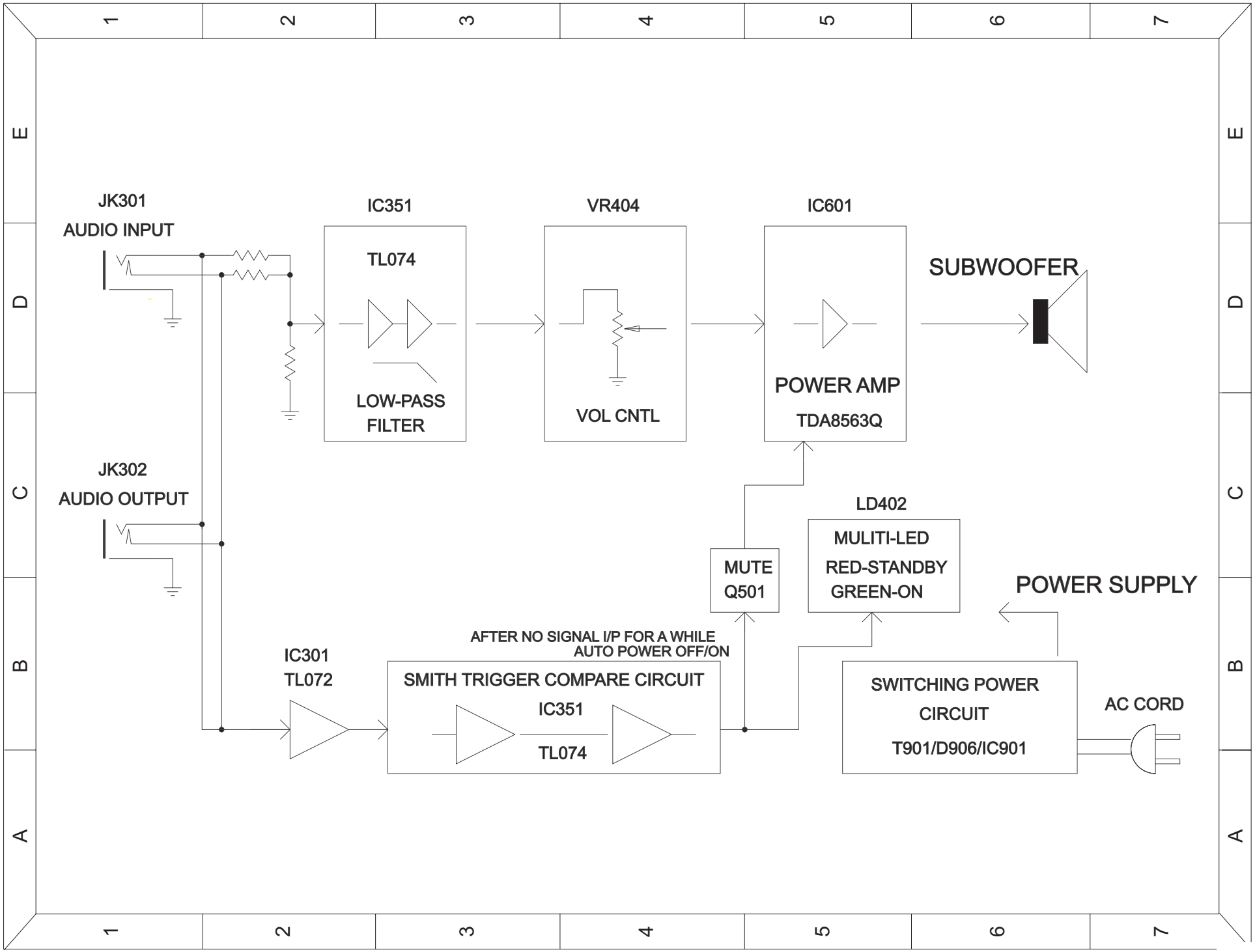
Procedure:

1) Turn the unit upside-down and remove the (8) mounting screws on the bottom plate. This includes the (2) deeply recessed screws near the center of the plate. Then remove the (2) smaller screws holding the black input plate to the end of the cabinet.
2) Pull the plate and amplifier up and out the cabinet.
3) Unplug all (3) molex connectors, and remove the (2) small screws holding the input plate onto the amplifier PCB; remove the input plate.
4) To gain access to the components, remove the (2) remaining small screws holding the PCB to the bottom plate and detach it from the plate.
5) Locate C351 - 100pf SMD cap. Replace with 470 pf part, (JBL part #CP1885). See drawing.
6) Locate R348 - 330KΩ SMD resistor. Replace with 100kΩ part, (JBL part #RS2043).
7) Locate Diode D351. Solder a 10KΩ resistor (JBL part #RS2042) in parallel with the diode.
8) Reassemble and replace the amplifier assembly into the cabinet in the reverse order , making sure all connectors and screws are replaced.* When re-attaching the input plate make sure both ground terminals are attached to the screw.
9) Test unit and assure that the subwoofer stays in the standby mode with no input signal, and comes out of protection with a 50 Hz, 50 mV input signal.

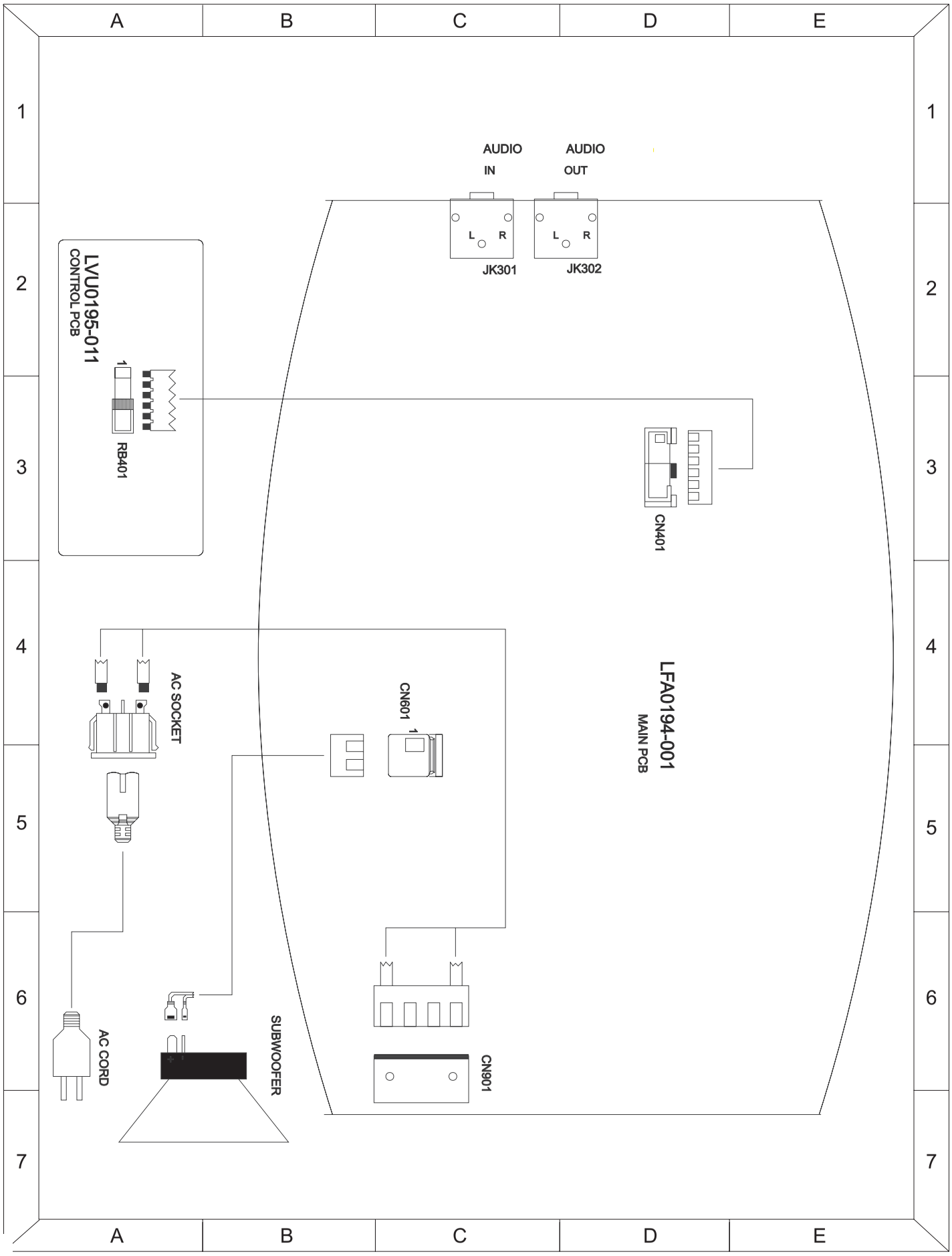


* When replacing the final two screws in the center of the bottom plate, because of the design you cannot drop the screws into each cavity and expect the screws to align with the holes.
With a Philips screwdriver well fitted to the screw head, you may either use a magnetized screwdriver and lower the tip (with screw) carefully down into the cavity to align; OR turn the subwoofer right-side up and insert the tip with screw up into the cavity.

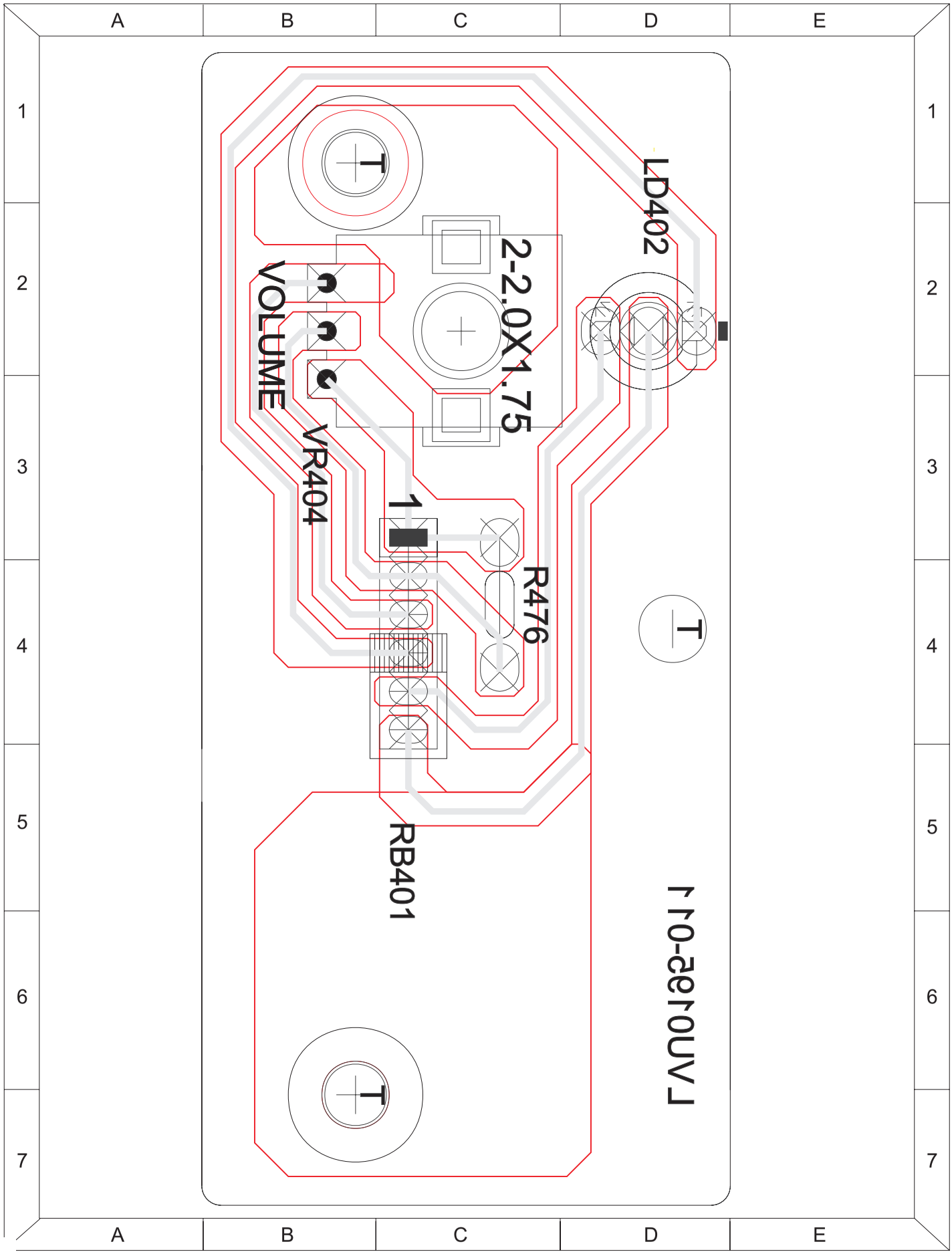
Model	Serial number 120V	Serial number 230V	Status	Action
Media Sub2000	AC0029-10001 to AC0029-11300		False Triggering	Change value of C351 and R348; add 10KΩ resistor in parallel with D351
Media Sub2000	AC0029-11301 and above	AC0030-01001 and above	Factory Modification	NONE REQUIRED


JK301
AUDIO INPUT
IC351
TL074
LOW-PASS
FILTER
VR404
VOL CNTL
IC601
POWER AMP
TDA8563Q
SUBWOOFER
JK302
AUDIO OUTPUT
LD402
MULITI-LED
RED-STANDBY
GREEN-ON
MUTE
Q501
POWER SUPPLY
AFTER NO SIGNAL I/P FOR A WHILE
AUTO POWER OFF/ON
IC301
TL072
SMITH TRIGGER COMPARE CIRCUIT
IC351
TL074
SWITCHING POWER
CIRCUIT
T901/D906/IC901
AC CORD

WIRING DIAGRAM



CONTROL PCB PRINTED CIRCUIT



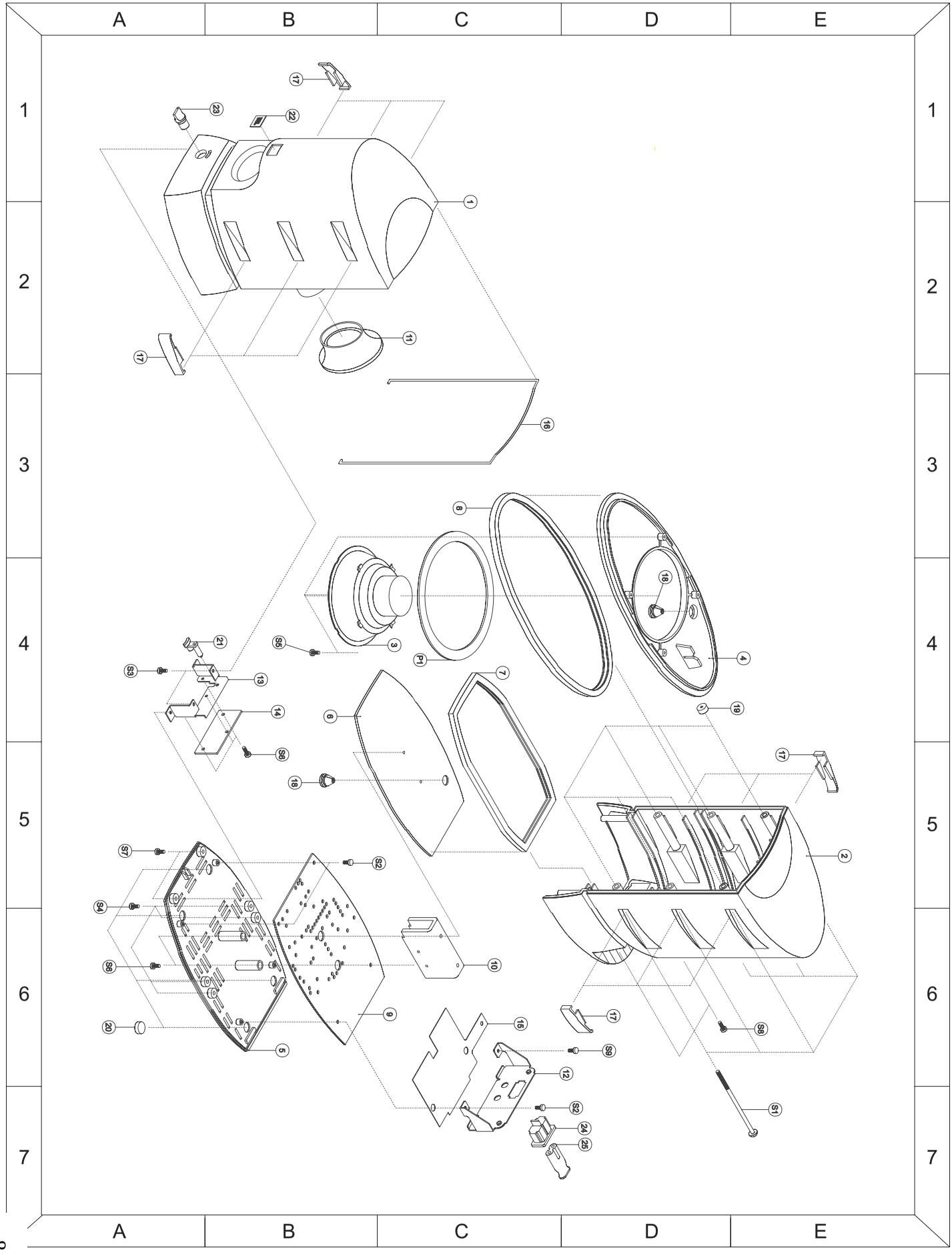
ICS AND TRANSISTORS VOLTAGE CHART

PART NO. \ REF. VOL. \ NO. OF PIN	1	2	3	4	5	6	7	8	9	10
IC301	6.0	6.0	6.0	G	6.0	6.0	6.0	11.6	X	X
IC351	6.0	6.0	5.8	11.3	6.0	6.0	6.0	1.4	5.9	5.9
IC601	2.2	G	14.8	7.4	G	7.3	X	G	X	14.8
IC901	2.3	0.0	0.0	X	X	X	X	X	X	X
IC902	14.8	G	11.9	X	X	X	X	X	X	X
IC903	1.0	0.0	0.0	X	X	X	X	X	X	X

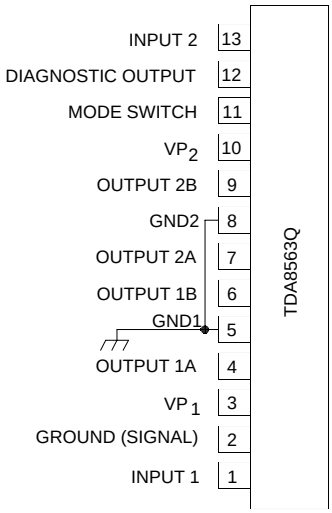
PART NO. \ REF. VOL. \ NO. OF PIN	11	12	13	14
IC301	X	X	X	X
IC351	G	1.2	6.0	1.1
IC601	11.1	X	X	X
IC901	X	X	X	X
IC902	X	X	X	X
IC903	X	X	X	X

PART NO. \ REF. VOL. \ NO. OF PIN	B	C	E
Q352	9.0	11.9	4.2
Q353	0.4	2.1	G
Q501	0.3	11.1	G
Q901	11.4	14.8	11.9

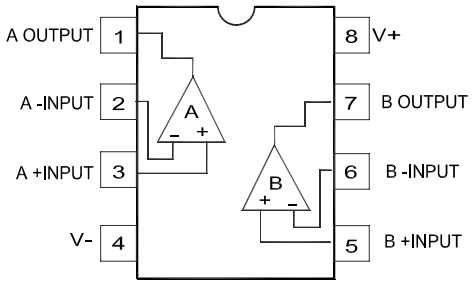
EXPLODED VIEW



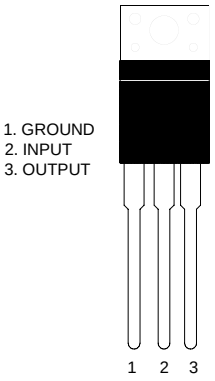
TDA8563Q, IC601



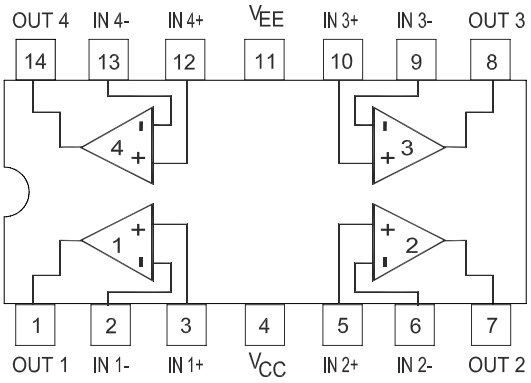
DUAL OPAMP,
TL072, IC301



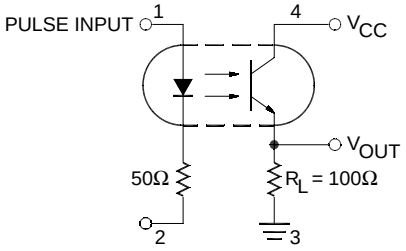
+12V REGULATOR
7812 IC902



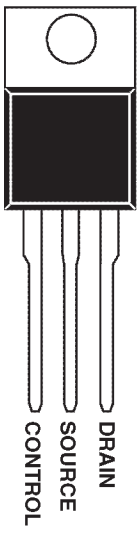
QUAD OP AMP,
TLO74, IC351

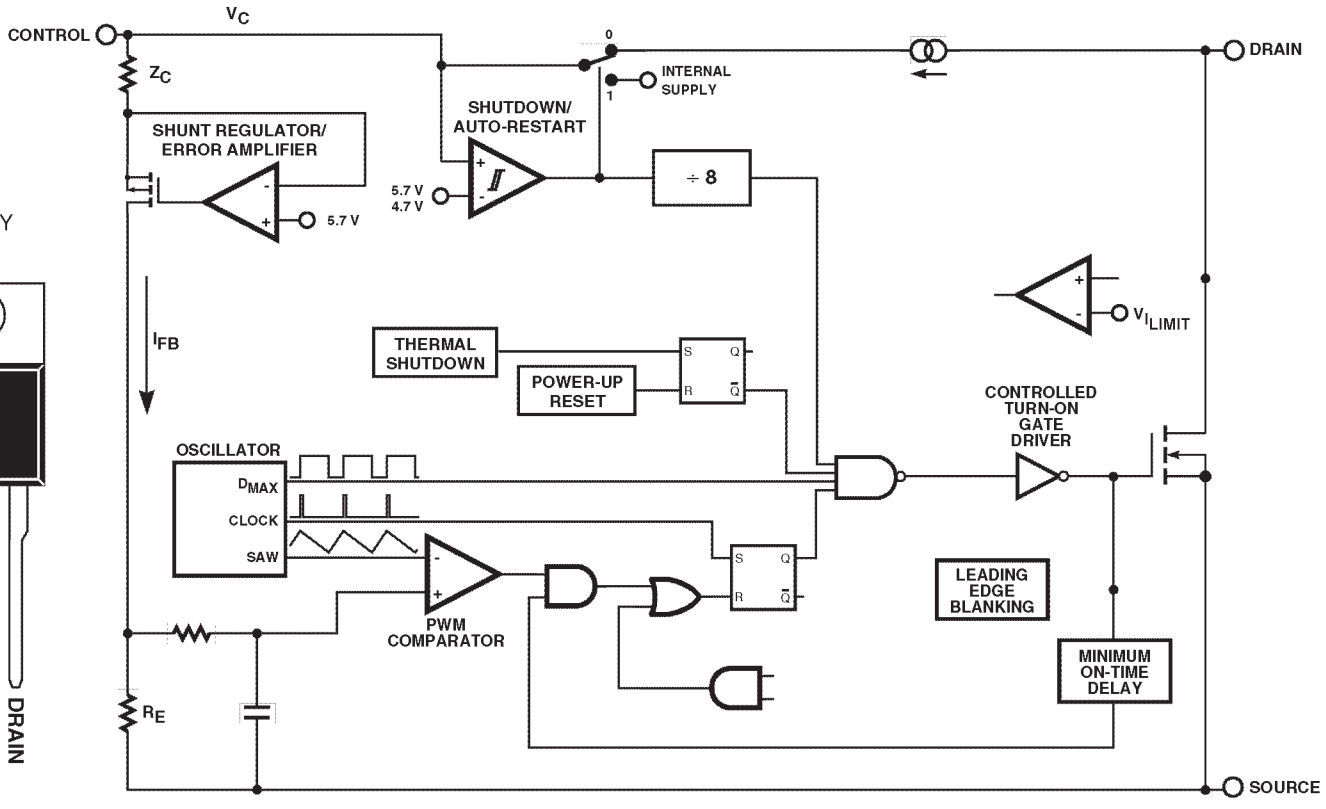


PS2501, IC903



TOP227Y, IC901





MECHANICAL PARTS LIST

REF#	DESCRIPTION		PART NO.	QTY
1	FRONT CAB	ABS W/KNOB HOLEx1	BPF5041-AQ1	1
2	REAR CAB	PP BEIGE	BPA0029-AQ1	1
3	SPEAKER DRIVER	4" 2 OHM 20W	FTF2040-371	1
4	BAFFLE	MAGIC WOOF	BPA0030-001	1
5	BOTTOM	MAGIC WOOF	BPB0023-001	1
6	PORT PLATE	t=3.0 mm	GAL0089-002	1
7	SEAL RUBBER		BRB0010-001	1
8	RUBBER		BRB0009-001	1
9	MAIN ASSEMBLY		APE0194-002	1
10	HEAT SINK		GAL0090-001	11
11	PORT EDGE		BPR0033-001	1
12	REAR BRACKET		GSE0181-002	1
13	PCB BRACKET		GSE0180-001	1
14	LED PCB ASSEMBLY		APE0195-012	1
15	TIN FOIL	0.1 TIN+0.4 PAPER	GTN0034-001	1
16	PVC PLATE	L20.0xW6.0xT0.5 mm	BNP0052-001	3
17	MASK PLATE	MAGIC WOOF (M.SUB)	BPA0031-AQ0	12
18	RUBBER		BRB0008-001	2
19	BUSHION	BOSS BUSHION	BRB0014-001	6
20	FEET		BRF0024-001	4
21	LENS		BPN0066-001	1
22	LOGO PLATE	LOGO PLATE	BPL0018-002	1
23	KNOB	MEDIA SUB	BPK5041-AQ0	1
24	AC SOCKET	2.5A~250V UL/CSA/VDE	CPP0002-004	1
25	LINE CORD	VDE 1830 MM	2559-002222	1
P1	DRIVER SPONGE	OD102xID91xT1	IVE0043-002	1
S1	SCREW	M4x0.7PxL85.0 mm	H060501-185	6
S2	SCREW	T3.0x1.27P-2RHxL8 mm	H101001-108	3
S3	SCREW	T3.0xL8.0 mm	H101001-308	2
S4	SCREW	T3.0xL16.0 mm	H101001-316	4
S5	SCREW	T3.0xL10.0	H101002-310	4
S6	SCREW	M3x0.5Px8 mm	H120301-308	2
S7	SCREW	M3x0.5Px10 mm	H120301-310	2
S8	SCREW	M3x0.5PxL8.0 mm	H120308-308	2
S9	SCREW	T3.0xL10.0 mm	H101001-110	1

MEDIA SUB2000 ELECTRICAL PARTS LIST

DESIGNATOR	DESCRIPTION		PART #	QTY
CAPACITORS				
C301,C302	CHIP CAP	220 pF 50V 10%	PCV5645-221	2
C303,C304,C352,C612	CHIP CAP	1 uF 16V +80-20%	PCV3962-105	4
C350,C353,C905,C909, C911-C915,C930	CHIP CAP	0.1 uF 50V 20%	PCV3955-104	10
C351	CHIP CAP	470 pF 50V 10%	PCV5645-471	1
C354	COND ELECT	330 uF 16V 20%	PRE3952-331	1
C355,C910	COND ELECT	100 uF 16V 20%	PRE3952-101	2
C504,C505,C608	CHIP CAP	4.7 uF 16V +80-20%	PCV3962-475	3
C600,C603,C605	CHIP CAP	0.068 uF 50V 5%	PCV5635-683	3
C604	CHIP CAP	0.15 uF 50V 10%	PCV3945-154	1
C606	CHIP CAP	0.022 uF 50V 10%	PCV5645-223	1
C609	CHIP CAP	0.001 uF 50V 10%	PCV5645-102	1
C610	CHIP CAP	0.22 uF 50V +80-20%	PCV3965-224	1
C901	COND SAFTY	0.1 uF 250V 20%	PVS3559-104	1
C902	COND ELECT	150 uF 400V 20%	PJE995E-151	1
C903	COND ELECT	47 uF 25V 20%	PRE3953-470	1
C907	COND ELECT	2700 uF 25V 20%	PVR9953-272	1
C908	COND ELECT	1000 uF 25V 20% D=10	PVE3953-102	1
C916	COND ELECT	22 uF 25V 20%	PRE3953-220	1
C917,C918	COND SAFTY	0.0022 uF 250V 20%	PVS3559-222	2
C919,C920	COND SAFTY	0.001 uF 250V 20%	PVS3559-102	2
CONNECTORS				
CN401	CONNECTOR	J.S.T. 2.0mm PH	CCN7879-026	1
CN601	CONNECTOR	2 PIN CL3962WVO	CCN3962-002	1
CN901	CONNECTOR	4 PIN CL3962WVO	CCN3962-234	1
SEMICONDUCTORS				
D351,D903,D905	DIODE SW	LL4148 TELEFUNKEN	RCD4148-001	3
D902	DIODE	BYV26D PHILIPS	RAD0026-001	1
D906	DIODE	MBR/STPS20100CT	RHD2010-001	1
ZD903	DIODE	P6KE180A	RHD0180-001	1
ZD904	DIODE ZENR	13.5-14.0V .5W	RAZ0859-083	1
ZD908	DIODE ZENR	12.6-13.1V .5W	RAZ0859-082	1
IC301	IC 8 PIN	TL072 DUAL OP-AMP	RCI0720-001	1
IC351	IC 14 PIN	TL074CD QUAD OP-AMP	RCI0740-001	1
IC601	IC 13 PIN	TDA8563Q POWER AMP	RHI8563-001	1
BD901	RECTIFIER	BRIDGE RS204L	RHD0204-001	1
IC901	IC 3 PIN	TOP227Y PWM SWITCH	RHI0227-001	1
IC902	IC 3 PIN	REGULATOR +12V	RHI7812-004	1
IC903	IC 4 PIN	PS2501 OPTOCOUPLER	RHI2501-001	1
Q352,Q353,Q501,Q901	XISTR NPN	SMT TYPE (2SC945)	RCN1623-001	4
RESISTORS				
R301,R305,R353,R354,R357,R358, R503,R607,R905,R906	CHIP RES.	10K OHM 1/8W 5%	QCF0851-103	11
R303	CHIP RES.	5.6K OHM 1/8W 5%	QCF0851-562	1
R348	CHIP RES.	100K OHM 1/8W 5%	QCF0851-104	1
R351,R370,R610	CHIP RES.	100 OHM 1/8W 5%	QCF0851-101	3
R355,R356	CHIP RES.	150K OHM 1/8W 5%	QCF0851-154	2
R359	CHIP RES.	330K OHM 1/8W 5%	QCF0851-334	1

ELECTRICAL PARTS LIST (CONT'D)

DESIGNATOR	DESCRIPTION		PART #	QTY
R360,R606	CHIP RES.	220K OHM 1/8W 5%	QCF0851-224	2
R361	CHIP RES.	820K OHM 1/8W 5%	QCF0851-824	1
R362,R380	CHIP RES.	680K OHM 1/8W 5%	QCF0851-684	2
R363	CHIP RES.	82K OHM 1/8W 5%	QCF0851-823	1
R364,R615	CHIP RES.	470 OHM 1/8W 5%	QCF0851-471	2
R366,R368,R614	CHIP RES.	1K OHM 1/8W 5%	QCF0851-102	3
R369	CHIP RES.	680 OHM 1/8W 5%	QCF0851-681	1
R501,R907	CHIP RES.	22K OHM 1/8W 5%	QCF0851-223	2
R502	CHIP RES.	33K OHM 1/8W 5%	QCF0851-333	1
R604	CHIP RES.	12K OHM 1/8W 5%	QCF0851-123	1
R605	CHIP RES.	910 OHM 1/8W 5%	QCF0851-911	1
R616	CHIP RES.	330 OHM 1/8W 5%	QCF0851-331	1
R901	RESISTOR	1M OHM 1/2W 5%	QHF0250-105	1
R902	CHIP RES.	22 OHM 1/8W 5%	QCF0851-220	1
R903,R904	CHIP RES.	33 OHM 1/8W 5%	QCF0851-330	2
BETWEEN Q352 BASS TO GND	RESISTOR	10K OHM 1/8W 5%	QAF0850-103	1
MISCELLANEOUS				
IC601 TO HSINK	SCREW	M3.0xL12.0xP0.5 mm	H120302-312	2
IC901	HEAT SINK	AL 30x25x35H BLACK	GAL0093-001	1
JK301,JK301	PHONE JACK	JYE TAI 3542-01-030	CJM9380-028	2
CN601 TO WOOFER SPK	CON/WIRE	2 COND 400/350mm	4999A-369	1
CN901 TO AC SOCKET	CON/WIRE	4 COND 180mm P=3.96m	4999A-370	1
D906	HEAT SINK	AL 2.0t BLACK	GAL0094-001	1
D906	NUT	M3.0x2.5t NICKEL	HNM3055-125	1
D906,IC901	WASHER	HD=6.7 ID=3.2 OD=3.6	DSS0007-001	2
D906,IC901	SI RUBBER	13x18x0.3t mm	GSI0001-001	2
F901	FUSE	4A 250V SLOW	KSD2400-001	1
HEAT SINK TO IC901	SCREW	T3x6 mm	H101012-206	1
HSINK TO D906	SCREW	M3.0x0.5PxL8.0 mm	H060308-108	1
L901	AC FILTER	A6109 33 mH/0.4A	JLF0002-001	1
L902	CHOKE	6110 3.3 uH	SVC0002-339	1
P1 TO P2	WIRE 18 GA	80 MM BLACK UL 1617	5824-080BB	1
PCB TO H/SINK(IC901)	SCREW	T3.0xL6.0 mm	H120301-106	1
T901	PWR TRANS	97-550-1 EE-30	TSA1201-001	1

LED PCB ASSEMBLY PARTS LIST

REF. NO	DESCRIPTION		PART NO	QTY
LD402	LED	MULTI-COLOR LED TWO	KEM0001-001	1
PCB BRACKET	FELT	120x5x0.2 mm	IVS0005-001	1
R476	RESISTOR	5K OHM 1/6W 5% CF	QAF0650-502	1
RB401 TO CN401	CON/WIRE	6 COND 200 mm	4999A-384	1
VR404	CNTL ROTRY	RV093NB10KPtEj-15F(S	MRR0103-012	1
	94V0 PCB	LED PCB	LVU0195-201	1

SCHEMATIC

LFA0194-002

JK301 INPUT
JK302 OUTPUT
R301 10K
R303 5K6
220P C301
220P C302
R305 10K
C600 .068
C603 .068
R604 12K
R605 910
C602 OTP
.022 C606
R610 100
R606 220k
R616 330
IC351/A TL074
R607 10K
C604 .15
R608 10K
IC351/B TL074
C605 .068
C612 1/50
C608 4.7/16
C609 .001
C610 0.22
IC601 TDA8563Q
1 IN 1
2 GND(S)
3 VP1
4 OUT1A
5 GND 1
6 OUT1B
7 OUT2A
8 GND 2
9 OUT2B
10 VP2
11 MODE
12 VDIAG
13 IN 2
SUBWOOFER
CN601
C905 .1
C350 .1
R351 100
R905 10K
IC301/B TL072
R906 10K
C915 .1
C910 100/16
R614 1K
R615 4K7
D905 1N4148
Q501 2SC945P
R501 22K
R503 10K
C505
C504 4.7/16
Q901 2SC945P
R502 33K
R907 22K
C916 22/16
C911 .1
IC902 78L12
C909 .1
1/50 C304 R354 10K
1/50 C303 R353 10K
C351 100P
R348 330K
IC301/A TL072
R355 150K
R357 10K
IC351/C TL074
C352 1/50
C353 0.1/50
R359 330K
D351 1N4148
R356 150K
R358 10K
C355 100/16
Q352 2SC945
R360 220K
C354 330/16
R370 100
R362 680K
IC351/D TL074
R361 820K
R363 82K
R380 680K
R366 1K
R369 680
R364 470
Q353 2SC945
R368 1K
CN401
C919 .001_Y1
C920 .001_Y1
RS204L BD901
ZD903 P6KE180
D902 BYV26D
C902 150/400
T901 TSA1201-001
D906 SPS20100CT
L902 3.3uH/2.5A
C907 2700/25
C908 1000/25
L901 33mH/0.4A
C901 0.1/250
R901 1M_1/2W
F901 4A
CN901
AC INLET
C912 .1
R903 33
13V ZD904
1N4148 D903
R902 22
PS2501 IC903
TOP227 IC901
C913 .1
C914 .1
47/25 C903
R904 33
ZD908 13V
C918 .0022_Y2
C917 .0022_Y2

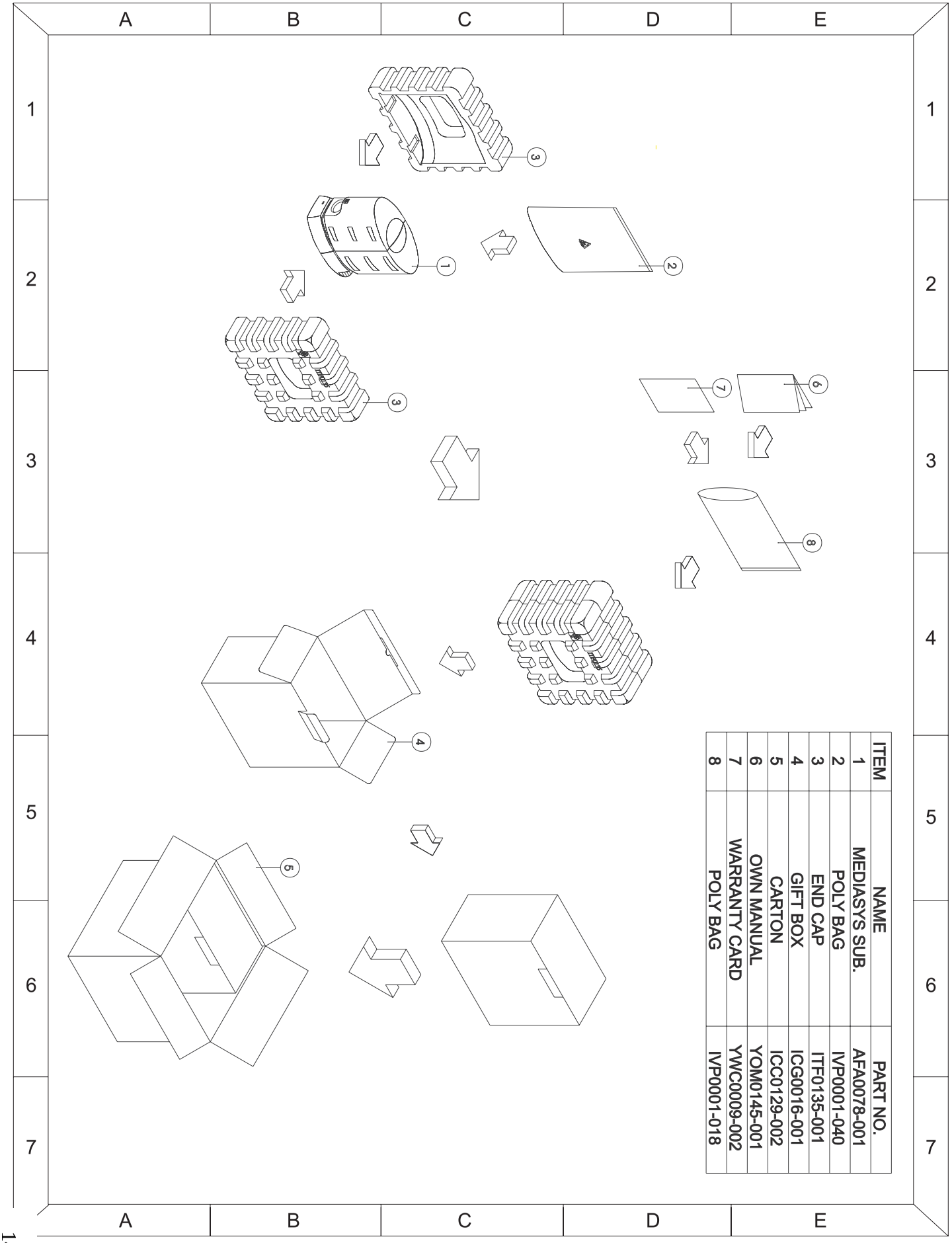
REMARK:

VOLUME CNTL & POWER INDICATOR LED

R476 5K
VR404 VOL 10K
LD402
RB401

LVU0195-011

PACKING EXPLODED VIEW



ITEM	NAME	PART NO.
1	MEDIASYS SUB.	AFA0078-001
2	POLY BAG	IVP0001-040
3	END CAP	ITF0135-001
4	GIFT BOX	ICG0016-001
5	CARTON	ICC0129-002
6	OWN MANUAL	YOM0145-001
7	WARRANTY CARD	YWC0009-002
8	POLY BAG	IVP0001-018